RTOWest: A Super Highway for Electric Power

by John Carr, PacifiCorp

Moving electric power from production to market is complex. Put most simply, transmission lines serve as the freeways and highways of the electric power system. As demand for electricity continues to increase rapidly, the strain on the transmission system grows proportionally, just as more cars slow traffic on our highways. The challenges in the electric energy industry are magnified in the far-flung Western states where, for example, major thermal power plants are located in remote areas of Wyoming, Utah and Montana, while population centers lie much farther west.

In 1992, passage of the Federal Energy Policy Act laid the groundwork for establishing Regional Transmission Organizations (RTOs) to streamline the complex process of moving electricity from generation plants to customers. In 1999, the Federal Energy Regulatory Commission (FERC) issued Order 2000 calling on utilities to form RTOs voluntarily or say why they would not be interested in participating. The FERC envisions RTOs providing operational and planning solutions to relieve growing strain on transmission lines.

Since the Order, policy makers in the Pacific Northwest have been examining the consumer benefits of forming an RTO in the region, while working on details of formation. The FERC intends to hasten the formation of RTOs throughout the country.

Regional Utilities Form Coalition

Owners of transmission in eight western states and British Columbia have formed a coalition committed to submitting a carefully crafted proposal to the FERC, with the primary objective of benefiting electric utility customers. Initial filings have been made with the FERC, but details of RTOWest are still in various stages of development. The coalition of Filing Utilities is Avista Corporation, Bonneville Power Administration, British Columbia Hydro and Power Authority, Idaho Power Company, Montana Power Company, Nevada Power Company, PacifiCorp, Portland General Electric Company, Puget Sound Energy, Inc., and Sierra Pacific Power Company.

The Filing Utilities also created the Regional Representatives Group—other utilities and stakeholders with a significant interest in electricity production and transmission—to participate in the deliberations. Representatives of RTOWest also are keeping federal and state elected officials and regulators apprised of progress. While the FERC has the jurisdiction to approve the formation of RTOWest, state regulatory approval will be required for PacifiCorp to become part of RTOWest.

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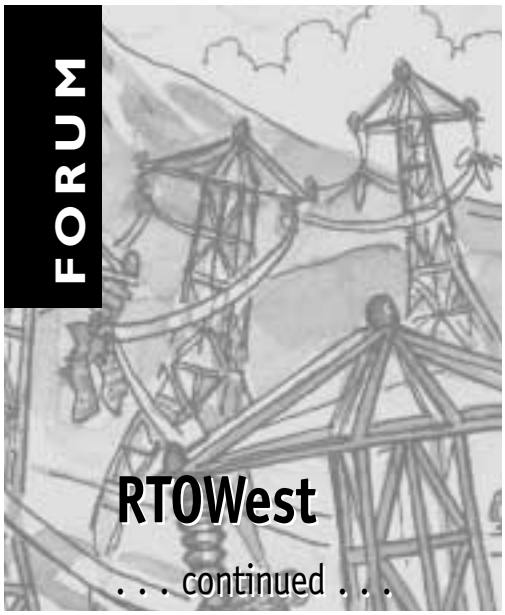
The Problems RTOWest Is Designed to Solve

Independent Governance

RTOWest will be a non-profit corporation independent of energy market participants, allowing membership by a wide array of transmission owners, including governmental organizations, such as BPA, Canadian utilities, investor-owed utilities, and for-profit transmission-only entities. The independent governance of the RTO is an important feature, designed to assure that buyers or sellers of electric power do not control the RTO. Impartial management of the transmission highway will assure customers open access to low-cost generation wherever it is available in the region.

Transmission Rates

Another objective of forming RTOWest is to change the system of pancaking rates. Under the existing arrangement, customers pay an additional transmission fee every time electricity moves from one transmission system to another. This occurs often in the West, where power from coal plants in the Rocky Mountains may be delivered to Southern Oregon



RTOWest

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across three transmission systems. The present transmission system is akin to a toll road where motorists are required to pay an additional toll whenever they cross state borders. Under RTOWest, the system will be analogous to motorists paying one fee to their home state for a license plate that allows them to drive their car anywhere in the country.

To avoid cost shifting among utilities, another key objective, RTOWest will employ a Company Rate structure in which the utility customer pays a single access fee based on the cost of the facilities of the transmission owner. For example, a customer served from Bonneville Power Administration facilities will pay the BPA Company Rate. This prevents customers of one Filing Utility with historically low transmission rates from experiencing a sudden rate increase or cost shift.

Transaction Burdens

RTOWest will consolidate regional operations into a single control area and will provide access to all of the transmission facilities it encompasses—"one-stop shopping" for transmission customers. Under the existing system, the administrative burden is heavy because utility customers of transmission are required to make transmission reservations and scheduling arrangements with the operators of each system.

A single control area will eliminate the transactional boundaries between different transmission owners and systems, and will allow for enhanced operational efficiency. In addition, a single control area operator has the potential to address reliability concerns more efficiently as they arise. Interested parties can also find all of the information about prices and conditions and available capacity in one place: the RTO's internet-based information system.

Investment in New Facilities

Demand for electricity has increased dramatically in the West for two reasons—population growth and the strong economy driven by the high tech industry. The high tech industry's energy requirements have grown significantly and production requires increasingly reliable energy service. Additionally, the exponential growth in business and home use of computers and other electronic devices has boosted commercial and residential electricity use.

Transmission owners in the West have long planned their systems on a coordinated basis and have successfully averted the need for new transmission lines. However, the growth of the 1990s has stretched transmission capacity to the point where it must be increased.

RTOWest can enhance existing transmission planning and expansion processes in several ways. With planning authority over all of the facilities it controls, RTOWest will have a complete understanding of system needs. Where the marketplace cannot or does not respond to price signals, the RTO provides a safety net by addressing problems of inadequate transmission related to the reliability of the system. It will also provide more certainty for investors in new transmission and generation sites by establishing stable, known market rules.

Transmission costs, however, will remain only a small percentage of total electricity costs, approximately 10 percent of an average residential customer's bill.

Abundant generation is critical to the reliability of the electric power system and to properly functioning markets. However, needed generation cannot be placed just anywhere on the transmission system with equally effective results. Building generation on an already strained transmission line can make a bad situation worse. To use the highway analogy again, it is similar to putting a major new business on a thoroughfare already suffering from bumper-to-bumper traffic during rush hour.

Congestion Management

Occasionally, congestion occurs on the existing transmission system. Analysts expect this to occur more frequently in the future. Currently, utilities manage much of the congestion by changing the proposed patterns of generation use.

RTOWest will help to remedy congestion in several important ways. First, all actions taken to relieve congestion will become transparent, exposing to all where problem spots are growing. Second, utilities that do not face congestion costs to serve their current load service and contract obligations will not incur congestion costs to meet those obligations in the RTO system. Third, the RTOWest will have a strong market-monitoring function to guard against abuses. Fourth, the RTOWest will have a strong planning function, allowing it to identify reliability and congestion problem areas early and develop approaches for solving them.

Finally, RTOWest will help relieve congestion by giving clear market signals. This will make transmission owners and developers of generation better able to construct new transmission facilities and to place generation resources or demand-side alternatives in the most beneficial locations.

Transmission Scheduling under RTO West

A method of economic "dispatch" will be put into practice, whereby utilities and the RTO will share load needs and transmission capacity information on an hourly basis. This allows generators to bid for space on power lines. For example, Utility A has two transmission lines connecting two generating plants. It is cheaper and more efficient to get power on the first line, so they will bid to use it. Utility B would like to use that first line as well so it provides a higher bid. Rather than bidding any higher, it is in the best interest of Utility A to simply use the second line even though that generator is more expensive—perhaps it is an older, less efficient plant. In this way the system is setup so that use of the scarce resource—the first line—goes to the highest bidder. In this way each transmission user will look for the cheapest way to meet its transmission needs. The bidding process will also allow the various players to discern the value of different areas on the transmission grid. This creates a system of price signals that will direct the use and expansion of transmission lines and generation. It will also pay for utilities to use less peak energy. Over the long-term, high-bid lines and congested grid areas will cause utilities to develop cheaper solutions, whether it is building new lines, building new generation, or finding ways to conserve energy. It's classic capitalist theory: a competitive market is the best way to allocate scarce resources and provide incentives to avoid high costs.

Benefits Versus Costs

A range of views exists concerning the balancing of benefits of RTOWest with costs. Operating and capital expenses of RTOWest will likely increase the overall cost for transmission service by a small percentage. Transmission service costs, however, will remain only a small percentage of total electricity costs, approximately 10 percent of an average residential customer's bill.

Major economic benefits of an RTO in the Northwest will offset the slight cost of increase. These benefits will spring from three sources:

1. Positive effects on future infrastructure investment decisions.
2. Increased liquidity and competition within the wholesale generation market along with improved market signals concerning location of new transmission and generation.
3. Enhanced reliability that will reduce transmission outages.

Conclusion

PacifiCorp, one of the largest owners of transmission lines in the West, supports the formation of RTOWest because it will provide a reliable, cost-effective, and efficient transmission system for the benefit of electricity consumers throughout the West.

John Carr is a Managing Director, Major Issues Projects, in Portland, Oregon. He has been employed at PacifiCorp for four years and currently leads the Company's effort to establish RTO West.